

REMARKS

Claims 2-14 remain in this application. Claim 1 has been cancelled and new claims 13 and 14 added. Claim 3 has been made dependent on claim 2. The claims remaining are rejected as obvious over Kanabe et al. in view of Honda (Claim 2 (and presumably 3 and 4)) or further in view of Shimizu et al. (claims 5-12).

Claims 2-4 of the present application are directed to a perpendicular magnetic recording medium having a soft magnetic underlayer, a non-magnetic amorphous metal layer containing Ni, and a perpendicular recording layer laminated on a substrate in this order. Claim 11 claims a magnetic storage apparatus having this magnetic recording medium.

Claims 5-10 of the present application are directed to a perpendicular magnetic recording medium having a soft magnetic underlayer containing nano-crystals, a non-magnetic amorphous metal layer, and a perpendicular recording layer laminated on a substrate in this order. Claim 12 claims a magnetic storage apparatus having the magnetic recording medium.

Kanbe et al. discloses a longitudinal magnetic recording medium having a first amorphous underlayer containing Ni, a second underlayer, and a recording layer, laminated on a substrate in this order.

Honda et al. discloses a perpendicular magnetic recording medium having a soft magnetic layer, either a crystalline underlayer having an hcp structure or an amorphous underlayer containing Si and Ge, and a perpendicular magnetic film, laminated on a substrate in this order (see Fig. 13 and column 17, lines 31-34).

Shimizu et al. discloses a perpendicular magnetic recording medium having a soft magnetic layer, a first underlayer, a first perpendicular magnetic film, a second underlayer, and a second perpendicular magnetic film laminated on a substrate in this order (see Fig. 2, section 78 to 79).

The magnetic recording medium of Kanbe et al. is a longitudinal magnetic recording medium having a recording layer wherein the c axis, forming an easily magnetized axis, has an in-plane orientation. Thus, in addition to the differences noted by the Examiner, Kanbe et al. does not disclose or suggest the perpendicular recording layer of the present invention (see column 4, lines 6-10).

Honda et al. does not disclose or suggest the formation of a non-magnetic amorphous metal layer containing Ni between the soft magnetic underlayer and the perpendicular

recording layer. Thus, the combination of these references does not lead to what is claimed in claims 2-4 and 11.

Furthermore, it is evident that, since Kanbe et al. discloses only a longitudinal magnetic recording medium, which is totally unrelated to the perpendicular magnetic recording medium of the present invention, there is no suggestion of combining Honda et al. with Kanbe et al., in the first place, to reach the arrangement of claims 2 to 4 and 11.

Further, when considering claims 5-10 and 12, neither Honda et al. nor Shimizu et al. discloses or suggests that the soft magnetic underlayer contains nano-crystals. The Examiner admits this with respect to Honda et al. But it is equally true of Shimizu et al.; the Examiner has not pointed to such teaching in Shimizu et al., nor can he. The soft magnetic underlayer of the present invention is formed by precipitating nano-crystals from amorphous materials with heat treatment or the like, and this point is not disclosed or suggested by Honda et al. and Shimizu et al. either.

Moreover, once again, since Kanbe et al. discloses only a longitudinal magnetic recording medium, which is totally unrelated to the perpendicular magnetic recording medium of the present invention, there would be no motivation to combine Honda et al. and Shimizu et al. with Kanbe et al. to reach the configuration of claims 5-10 and 12 of the present invention.

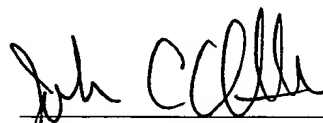
From the above, it is clear that the presently claimed invention is not anticipated by nor taught or suggested by Kanbe et al, Honda and Shimizu et al., either alone or in combination.

In view of the above, Applicants believe that all claims remaining in this application are in condition for allowance, prompt notice of which is respectfully solicited.

The Office is hereby authorized to charge any additional fees under 37 C.F.R. § 1.16 or § 1.17 or credit any overpayment to Deposit Account No. 11-0600.

Respectfully submitted,

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